January 7, 2003

W. Kenneth Ferree
Chief, Media Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Ex Parte Presentation In Commercial Availability of Navigation Devices
(CS Docket No. 97-80)

Dear Mr. Ferree:

On behalf of the National Cable & Telecommunications Association ("NCTA"), I am
attaching for inclusion in the record in the above-captioned proceeding Declarations by Kevin S.
Wirick, Vice President, Marketing, Digital Media Systems, in Motorola's Broadband
Communications Sector ("BCS"), and Dr. William E. Wall, Technical Director of Subscriber
Networks for Scientific-Atlanta, both of whom have substantial experience in developing and
marketing "integrated" (i.e., embedded security) set-top boxes, as well as separate security
OpenCable Point-of-Deployment Modules ("PODs") and "Host" devices.[1] These Declarations
respond to the Declaration of Mr. Jack W. Chaney, filed in the above-captioned proceeding by
counsel for the Consumer Electronics Retailers Coalition, regarding the additional costs
associated with a POD-Host combination, as compared to an integrated set-top box. Both Mr.
Wirick and Dr. Wall conclude that Mr. Chaney's cost assessments are not credible and that the
cost information previously submitted by NCTA on this issue is reasonable and should be relied
upon by the Commission.

The NCTA cost report filed in this proceeding on August 2, 2002 indicates that, while
Host products may include certain features (e.g., enhanced portability) that make them appealing
to particular customers, the per-unit cost to a cable operator of a POD-Host combination would
be approximately $72 to $93 more than the cost of an integrated set-top box with the same
functionality. The cost data in the NCTA report was based on consultations with Motorola and
Scientific-Atlanta, which both have extensive experience with the OpenCable POD-Host

---

[1] Dr. Wall's Declaration is in facsimile form. The original will be submitted to the Commission upon its receipt.

specification and have developed OpenCable POD and Host devices. Also, as NCTA's report explained (at n. 9), this estimated range of additional costs associated with the POD-Host combination took into account volume purchases of integrated boxes on the one hand and POD-Host combinations on the other.

As the attached Declarations conclude, Mr. Chaney's estimates of per-unit POD costs are based on the purported cost of manufacturing an entirely different product -- a "smart card" designed to conform to the National Renewable Security Standard ("NRSS") Part A standard, rather than the NRSS, Part B standard, which served as the basis for the POD-Host interface specifications. As these Declarations show, NRSS-A devices are smaller, less sophisticated, and therefore less costly than the more complex, robust, and highly secure devices developed to comply with the NRSS-B-based OpenCable POD-Host specification. The greater technological complexity and sophistication required in OpenCable PODs is necessary to satisfy the Commission's requirement that all security functions be incorporated into a device separate from the Host and to ensure that video programming and other advanced services provided over digital cable systems are not vulnerable to piracy. Mr. Chaney's Declaration fails entirely to account for these facts.

In addition, while Mr. Chaney acknowledges that there are additional costs associated with the new OpenCable "POD slot" that must be taken into account in assessing the overall added cost of a separate security POD-Host combination, he does not provide any cost data whatsoever for this interface. Mr. Chaney also completely ignores the additional costs associated with the duplicative hardware and software that must be included in the Host device, which are not necessary in an integrated set-top box.

In short, Mr. Wirick's and Dr. Wall's Declarations clearly demonstrate that Mr. Chaney's cost estimates are unreliable, for a number of reasons, and should be given no weight by the Commission. In contrast, the range of costs identified in the NCTA report represents a reasonable, good faith estimate of the additional costs that would likely be imposed on cable operators and consumers if the 2005 ban on integrated devices is maintained.
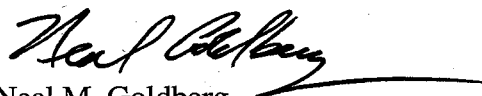
NCTA strongly believes that consumers should have the benefit of the broadest possible range of equipment options, including the opportunity to decide whether to obtain an integrated product or a POD-Host combination, on the basis of their own individual needs and preferences. As the NCTA cost report and the attached Declarations show, implementation of the integration ban would deny consumers the opportunity to make this choice and thereby deprive them of an option that may well be more cost effective and better suited to their needs. In this regard,

162000.11

NCTA strongly supports the provision in the DTV Transition discussion draft recently introduced by the staff of the House Committee on Energy and Commerce, which would eliminate the integration ban. As Chairman Tauzin said in his opening statement during the hearing on this discussion draft, "[i]ntegrated boxes may very well be more convenient and less expensive for consumers – at the very least, there is another choice for consumers."

Please let me know if I can provide further information or assistance to you and your staff as the Commission considers how to proceed on this important set of issues.

Sincerely,

Neal M. Goldberg

Attachments

cc: Marlene H. Dortch, Secretary (for inclusion in CS Docket No. 97-80)
Chairman Michael K. Powell
Commissioner Kathleen Abernathy
Commissioner Michael Copps
Commissioner Kevin Martin
Commissioner Jonathan S. Adelstein
William Johnson, Deputy Chief, Media Bureau
Deborah Klein, Chief of Staff, Media Bureau
Rick Chessen, Associate Chief, Media Bureau
Thomas Horan, Senior Legal Advisor, Media Bureau
Mary Beth Murphy, Chief, Policy Division, Media Bureau
Steven A. Broeckaert, Deputy Chief, Policy Division, Media Bureau
Susan Mort, Attorney Advisor, Media Bureau
John P. Wong, Chief, Engineering Division, Media Bureau
Bruce Franca, Deputy Chief, Office of Engineering & Technology
Michael Lance, Deputy Chief, Engineering Division, Media Bureau
Robert M. Pepper, Chief, Office of Plans & Policy
Jonathan D. Levy, Deputy Chief Economist, Office of Plans & Policy
Amy Nathan, Senior Counsel, Office of Plans & Policy

162000.11

In the Matter of	)	
	)	
Implementation of Section 304 of the	)	CS Docket No. 97-80
Telecommunications Act of 1996	)	
	)	
Commercial Availability of Navigation Devices	)	

DECLARATION OF KEVIN S. WIRICK

I, Kevin S. Wirick, do hereby declare as follows:

1.   I am Vice President, Marketing, Digital Media Systems, in Motorola's Broadband

Communications Sector. My business address is 6450 Sequence Drive, San Diego, California.

2.   I have twenty years of experience in the development and deployment of digital

communications systems. I had a leading role in the deployment of the first digital cable systems

and was responsible for the conditional access communications system that today controls over

six million set-top boxes in over 1600 cable systems, as well as millions more set-top boxes that

secure programming distributed by satellite providers. I have managed the design, development,

and market introduction of conditional access and set-top products for six years. Today I oversee

product management and marketing for Motorola's conditional access products, including both

separated security and embedded security systems, for direct broadcast satellite systems, digital

cable systems, and commercial satellite networks that deliver the majority of television

programming in North America.

3.   The purpose of my declaration is to provide an assessment as to the validity of

certain cost estimates and other assertions made in the Declaration of Jack W. Chaney ("Chaney

Declaration"), dated August 14, 2002 and filed on August 15, 2002 with the Commission in the

above-captioned proceeding. Mr. Chaney's Declaration was submitted to the Commission by counsel for the Consumer Electronics Retailers Coalition ("CERC"), as an adjunct to CERC's August 1, 2002 ex parte filing in this proceeding. See Letter from Robert S. Schwartz, Counsel to CERC, to Ms. Marlene H. Dortch, Federal Communications Commission, filed August 15, 2002. Mr. Chaney's statement is apparently offered as support for CERC's criticism of the data submitted by the National Cable & Telecommunications Association ("NCTA") regarding the cost of implementing the January 1, 2005 ban on the deployment of "integrated" (i.e., embedded security) navigation devices (the "integration ban"). See CERC Reply Comments, filed in CS Dkt. No. 97-80, at 14 (Aug. 1, 2002).

4.   In a report filed in this proceeding on August 2, 2002, NCTA indicated that the per-unit cost to a cable operator of a separate security Point of Deployment ("POD") module and associated digital "Host" device would be approximately $72 to $93 more than the cost of an integrated set-top box with the same functionality. See Report of NCTA Regarding the Significant Costs to Consumers Arising from the 2005 Ban on Integrated Set-Top Boxes, filed in CS Dkt. No. 97-80, at 6 (Aug. 2, 2002) ("NCTA Cost Report").

5.   As the NCTA Cost Report indicates, the cost data collected by NCTA was based on consultations with leading manufacturers, including Motorola, that have extensive experience with the POD-Host specifications developed through the OpenCable process, and that (unlike Mr. Chaney) have actually designed, manufactured, marketed, and delivered OpenCable PODs and Hosts. See NCTA Cost Report at 5. I was personally involved in the effort to develop the cost data and other information provided to NCTA in conjunction with its Cost Report, and it is my belief that this information was, and remains, true and accurate.

6.   As explained below, Mr. Chaney's cost estimates are flawed for at least three

reasons: First, he underestimates the additional costs of developing and manufacturing

PCMCIA-based NRSS-B devices, as compared to the much less physically complex NRSS-A-

type smart cards on which he focuses. Second, he underestimates the additional costs associated

with the POD-Host interface's extensions of the NRSS-B specification, which were required to

establish a highly secure, interactive, and robust OpenCable POD module capable of

interoperating with and supporting a more portable companion Host device. Finally, he

completely ignores the additional costs associated with the new POD-Host interface and

associated hardware and software contained in OpenCable <u>Host</u> devices.

7.   **<u>Additional Costs Associated with PCMCIA-based NRSS-B Devices.</u>** Mr.

Chaney's estimates of additional per-unit POD costs are based on an extrapolation from the

purported costs he cites for manufacturing a "smart card" security implementation, modified to

conform to the National Renewable Security Standard ("NRSS") <u>Part A</u> standard. However, as

Mr. Chaney acknowledges (at 1), the POD-Host interface specification developed through the

OpenCable process is based on the NRSS, <u>Part B</u> standard (EIA-679-Part B), which employs a

PCMCIA-based physical form factor that is quite different from, and significantly more complex

than, the form factor adopted in the NRSS Part A smart card standard.

8.   Most importantly, the NRSS Part A interface is limited to only eight electrical

contacts using serial communication, whereas the NRSS Part B interface employs 68 electrical

contacts and parallel communications. <u>See</u> Foreword to National Renewable Security Standard,

EIA-679-B. The more complex PCMCIA physical form factor of the NRSS-B (as well as the

POD-Host) specification requires more silicon, a more powerful central processing unit, more

memory, more complex wiring, and a more durable metal casing. In all respects, these

additional components translate into a significantly higher cost for NRSS-B-type devices than the cost for devices built to the much less physically complex NRSS-A specification.

9. **Additional Costs Associated with Extending the NRSS-B Specification to Provide for a Highly Secure POD Module.** In addition to the significant physical distinctions between NRSS-A and NRSS-B, the POD-Host interface specification actually extends the NRSS-B specification in several important functional respects. For example, the POD incorporates out-of-band downstream receiver and upstream transmitter signal processing, Packet ID processing, message extraction, firmware control functions, a copy protection mechanism including encryption and key exchange, and various authorization functions in order to facilitate the secure transmission of advanced one-way and two-way digital services such as Interactive Program Guides, High Definition Video, Impulse Pay-Per-View (IPPV), Video On Demand (VOD), General System Management Messaging, and other Interactive Services. See SCTE DVS/295, Section 2.2. In contrast, the NRSS-B specification (as well as the NRSS-A specification) was designed for use in conjunction with a traditional one-way terrestrial or satellite broadcast architecture, as opposed to the more robust two-way broadband architecture supported by the POD-Host specification.

10. The greater technological complexity and sophistication required in OpenCable PODs is necessary to (i) satisfy the FCC's requirement that all security functions be incorporated into a device separate from the Host, (ii) ensure that implementation of this separate security requirement does not leave video programming and other advanced services provided over digital cable systems vulnerable to piracy, and (iii) enhance the portability of the companion Host device. Indeed, the OpenCable POD was designed with the goal of achieving a high level of security comparable to that provided by integrated set-top devices utilizing embedded security

technology, such as Motorola's MediaCipher® system, which has never been compromised during its 12-year evolution, with over twenty-five million set-top boxes manufactured.

11.   As NCTA's report indicates, implementing the more complex separate security approach adopted in the OpenCable POD-Host specification entails significant additional costs above and beyond those associated with integrated set-top devices. In particular, as NCTA correctly observes, the POD and Host require their own separate central processing units, memory, firmware, and software, as well as new PCMCIA-compliant connectors for the interface and command and signaling protocols that are not required when security and non-security functionality reside in a single integrated unit. See NCTA Cost Report at 3. Moreover, separate copy protection encryption/decryption functionality in *both* the POD *and* Host is required in order to ensure that encrypted programming remains secure as it passes across the POD-Host interface. And, due to the complex functions it must perform as described above, the POD's central processing unit is much more powerful -- and hence more costly -- than a typical CPU in an NRSS-A or NRSS-B device. Id. This also carries with it additional and more expensive ROM and RAM memory requirements, in order to execute these increased functions. Given all of these factors, the NCTA Cost Report's range of estimated additional costs per unit to cable operators to obtain a POD-Host combination is entirely reasonable.

12.   NCTA's range of estimated additional costs for the POD-Host combination is particularly reasonable when considered in light of the fact that numerous PCMCIA-based devices currently sold in the retail market -- such as phone modems; 802.11 devices performing home networking functions; and cards performing security, user authentication, and digital signature functions -- typically sell for prices between $50 and $140, depending on the functionality level, despite the fact that millions of these devices have already been sold. See,

e.g., e.g., http://www.pricegrabber.com; search term="PCMCIA" or "PCMCIA modem" (e.g.,Hi-Val "56K PCMCIA Data/Fax Modem 56Kbps PC Card II Data" = $76; Axent Technologies "Defender Smartcard Reader" for smart card functionality and user authentication = $73 - $77; Hawking Tech. "Wireless Network PC Card PCMCIA 11M IEEE 802.11B Standard" for wireless connection to local area networks = $69 - $74; Asante "Wireless PCMCIA Card Fixed Antenna" for home networking = $117 - $137). It is important to note that the above prices provide a conservative basis for comparison with a POD-Host combination because: (i) the computing power and complexity in an OpenCable POD are substantially higher than that generally included in these PCMCIA devices, and (ii) the range of estimated additional costs cited in the NCTA Cost Report were based on the total added costs associated with the POD and the Host device, whereas the figures cited above are for the PCMCIA card alone.

13.   In contrast, Mr. Chaney's cost estimates for the POD are simply not credible. Even if one assumes the validity of Mr. Chaney's cost figures for NRSS-Part A smartcards, as I have for purposes of this Declaration (notwithstanding the fact that, as Mr. Chaney admits, no NRSS-A devices have yet been produced on a commercial basis), these figures simply do not, nor can they, provide a reliable basis for determining the added cost of providing the requisite level of security through an NRSS-B-based POD-Host configuration.

14.   Mr. Chaney focuses almost entirely on his experience with, and the estimated costs of, hypothetical NRSS-A smart cards. In the final paragraph, he then suggests that the cited cost increments for such smart cards "provide guidance" for his conclusion that a $15 incremental cost for the POD could be reached before quantities reach five million units. However, there is simply no basis for this unexplained and unsubstantiated leap from statements

regarding smart cards on the one hand to cost conclusions about much more powerful and technologically complex PODs on the other.

15.   As the discussion above demonstrates, Mr. Chaney's conclusory assertion (at 1) that the NRSS-A smart cards he postulates are "fully comparable in performance to PODs" is simply wrong and betrays his fundamental misunderstanding of the POD-Host architecture. Rather, if one focuses in the first instance on the significantly more complex and sophisticated nature of NRSS-B-based OpenCable PODs, it is clear that Mr. Chaney's cost estimates are substantially understated.

16.   **Additional Costs Associated with the New Interface and Associated Hardware and Software in the OpenCable Host Device.** Although Mr. Chaney acknowledges (at 2) that the additional costs associated with the new OpenCable "POD slot" interface must be taken into account, he does not provide any cost data whatsoever for this interface. Moreover, he does not take into account <u>at all</u> the added costs associated with the duplicative hardware and copy protection software within the OpenCable Host device that are not necessary in an integrated device. <u>See</u> NCTA Cost Report at 5-6. His cost estimates are even more understated due to these omissions.

17.   I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and accurate.

Kevin S. Wirick

December 26, 2002

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of   )
)
Implementation of Section 304 of the   )   CS Docket No. 97-80
Telecommunications Act of 1996   )
)
Commercial Availability of Navigation Devices   ) .

DECLARATION OF William E. Wall

I, William E. Wall, Ph.D., do hereby declare as follows:

1.   I am Technical Director, Subscriber Networks for Scientific-Atlanta, Inc., 5030
Sugarloaf Parkway, Lawrenceville, Georgia 30044.

2.   As Technical Director of Subscriber Networks, and Previously as Chief Scientist
of Scientific-Atlanta's digital development program I have been directly involved in the
development of digital settops and conditional access systems for cable applications. I hold
several patents in these areas. I participated in the development of conditional access systems
for cable and satellite as early as 1983. I have actively participated in the development of SCTE
digital video standards, including the Point-of-Deployment Interface specification, where I was
an original contributing author. I developed much of the technology embodied in the DAVIC
out-of-band transmission specification, later adopted as SCTE 55-2. I currently represent
Scientific-Atlanta in both SCTE and ATSC standards bodies.

3.   I have prepared and executed this declaration in order to respond to certain
assertions made in the declaration of Mr. Jack W. Chancy ("Chancy Declaration"), filed in the
above-captioned proceeding on August 15, 2002 by the Consumer Electronics Retailers
Coalition, regarding the cost of implementing the ban on cable operator deployment of
"integrated" (i.e., embedded security) navigation devices, which is scheduled to be imposed as of
January 1, 2005.

4.   On August 2, 2002, the National Cable & Telecommunications Association
("NCTA") filed a report indicating that the cost to cable operators of a separate security Point of
Deployment module ("POD") and associated "Host" device would be approximately $72 to $93
more per unit than the cost of an integrated set-top box with the same functionality. See NCTA
Cost Report, filed Aug. 2, 2002, CS Docket No. 97-80 ("NCTA Report") at 6. The cost data
collected by NCTA was based on consultations with manufacturers, such as Scientific-Atlanta,
that have designed and developed OpenCable PODs and Host devices. See id. at 5.

5.   Based on Scientific-Atlanta's experience and expertise in the design and development of both integrated set-top devices and separate security OpenCable PODs and Host products, I believe that the range of costs identified in the NCTA Report represents a reasonable, good faith estimate of the added costs to cable operators and subscribers arising from the ban on integrated devices. I have reviewed the cost estimates provided in Mr. Chaney's declaration, and have concluded that for several reasons they are not credible and provide no valid basis for questioning the cost data reflected in the NCTA Report.

6.   As an initial matter, the cost figures cited by Mr. Chaney as the basis for his estimates relate solely to the cost of a separate security "smart card." At the end of his declaration, Mr. Chaney appears to acknowledge that, in addition to the cost of the separate security device (in this case, the OpenCable POD module), there are additional costs for the "Host interface" that must also be considered. See Chaney Declaration at 2. However, the declaration contains no data on the cost of this interface.

7.   Similarly, his cost estimates do not factor in the additional costs arising from the duplicative hardware and software included in OpenCable Host devices, as described in NCTA's Report at 5-6. Mr. Chaney's failure to take these costs (which are not incurred in the manufacture of integrated devices) into account makes his estimates at best incomplete and clearly unreliable as a basis for accurately determining the added costs that would be imposed if consumers are forced to obtain a POD-Host combination, in lieu of an integrated set-top device.

8.   Mr. Chaney's estimates of the cost of the POD module itself, which is the source of most of the additional costs arising from the ban on integrated devices, are also flawed and unreliable in several respects. Most notably, these estimates are based entirely on Mr. Chaney's unsubstantiated assertions regarding the cost of manufacturing "smart cards" based on the National Renewable Security Standard - Part A ("NRSS Part A") specification. However, cost data for NRSS Part A smart cards cannot provide a valid basis for determining the added costs associated with the development and production of OpenCable POD modules, which are based on the NRSS Part B specification (EIA-679-Part B).

9.   Mr. Chaney's declaration concedes, but then ignores, this distinction and instead proceeds from the apparent assumption that the asserted costs for NRSS Part A smart cards provide reliable "guidance" for determining OpenCable POD costs. See Chaney Declaration at 1. This assumption is plainly flawed, given the substantial physical and functional differences between the two devices, which make the NRSS Part A smart card cost data cited by Mr. Chaney clearly inappropriate as a basis for accurately estimating POD-related costs.

10.   Of particular note, the NRSS Part B specification, on which the OpenCable POD-Host specification was based, utilizes a PCMCIA form factor that is substantially more complex, with 68 electrical contacts, than the physical form factor employed in the NRSS Part A specification, which has only eight contacts. The more sophisticated PCMCIA form factor requires greater memory, a more robust CPU, more complex wiring, and other features that significantly increase the cost of devices manufactured to meet the NRSS-B specification, as compared with "smart card" devices manufactured to meet the less complex NRSS-A specification.

-2-

11.   It is also important to note that in addition to the added cost arising from the differences between NRSS Part A and NRSS Part B devices described above, the OpenCable POD-Host specification significantly extends the NRSS Part B specification to include enhanced functionality in a number of areas (e.g., out-of-band signal processing, firmware control, message extraction, authorization, and copy protection), in order to ensure the security of advanced digital one-way and interactive cable services, including HDTV, impulse pay-per-view, and video-on-demand. These enhancements further add to the cost of an OpenCable POD, as compared with an NRSS Part A smart card, or even with less complex NRSS Part B devices.

12.   For the foregoing reasons, Mr. Chaney's estimates of OpenCable POD costs, based on his asserted cost figures for NRSS Part A smart cards, clearly cannot provide a reliable basis for estimating the additional costs to cable operators and consumers of implementing the ban on integrated set-top boxes.

13.   I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and accurate.

William E. Wall

December 20, 2002